

# इंटरनेट

# मानक

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IS 3214 (1991): Engineers' drawing instruments, pencil points [PGD 22: Educational Instruments and Equipment]



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भारतीय मानक  
इंजीनियर आरेखण उपकरण, पेंसिल प्वाइंट — विशिष्टि  
( पहला पुनरीक्षण )

*Indian Standard*

ENGINEERS' DRAWING INSTRUMENTS,  
PENCIL POINTS — SPECIFICATION

( *First Revision* )

UDC 744.36 : 686.863.3

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NEW DELHI 110002

## **FOREWORD**

This Indian Standard ( First Revision ) was adopted by the Bureau of Indian Standards, after the draft finalized by the Drawings Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This standard is one of a series of Indian Standards on engineering drawing instruments. Pencil point is a drawing instrument accessory used by draughtsmen and engineers along with half set of compasses for drawing circles with pencil.

The standard was originally published in 1965. This revision is based on further experience gained in the manufacture of drawing instruments and other developments in this field.

The main modifications are :

- a) Tolerances on important dimensions and mating parts have been specified,
- b) Dimensions of pencil point fixing shanks have been modified from 3 mm to 3.5 and 4 mm, and
- c) Overall length of pencil points have been modified from 55 mm approx to  $57 \pm 0.5$  mm and additional size of  $41 \pm 0.5$  mm has been included.

In the preparation of this standard considerable assistance has been derived from DIN 58510-1976 'Präzision-Reisszeuge ( P ) Bleieinätze ( Pencil part )' issued by the Deutsches Institut für Normung ( Germany ).

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( revised )'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

# Indian Standard

## ENGINEERS' DRAWING INSTRUMENTS, PENCIL POINTS — SPECIFICATION

( First Revision )

### 1 SCOPE

This standard covers the requirements of pencil points of Type A and Type B for engineers' drawing instruments of following types.

### 2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard :

IS No.	Title
1068 : 1985	Electroplated coatings of nickel plus chromium and copper plus nickel plus chromium on iron and steel ( second revision )
2500 ( Part 1 ) : 1973	Sampling inspection tables : Part 1 Inspection by attributes and by count of defects ( first revision )
3222 ( Part 1 ) : 1989	Instruments screws : Part 1 Fasteners for drawing instruments ( first revision )

### 3 MATERIAL

The material for manufacture of pencil points shall be rolled, drawn or cast brass ( B ), nickel silver ( Ns ) or stainless steel ( Ss ).

### 4 DIMENSIONS

**4.1** The dimensions for Type A and Type B pencil points shall be as shown in Fig. 1.

**4.2** The tolerance on interchangeable dimensions shall be as shown in Fig. 1 and shall be capable of being locked tight with the locking screw.

**4.3** The figure is intended only to illustrate the dimensions and the design detail is left to the discretion of manufacturer so long as the specified dimensions are maintained.

### 5 DESIGNATION

Pencil points shall be designated by the commonly used name, type and number of this standard and material.

#### Example :

Pencil point Type A made from nickel silver ( Ns ) complete with screws shall be designated as :

Pencil Point A, IS 3214—Ns

### 6 GENERAL REQUIREMENTS

Pencil points shall have an arrangement for holding the pencil lead.

### 7 WORKMANSHIP AND FINISH

**7.1** Pencil points shall be finished dull or bright.

**7.1.1** When pencil points are made from brass, they shall be chromium plated to service Grade 2 according to IS 1068 : 1985.

**7.1.2** When pencil points are made from nickel silver or stainless steel, they shall be polished and buffed.

### 8 SCREWS

The different screws used with pencil points shall conform to the requirements as specified in IS 3222 ( Part 1 ) : 1989.

### 9 TEST

#### 9.1 Dimensional Test

Pencil points shall be tested for conformity with the requirements specified in 4.1 and 4.2.

### 10 SAMPLING

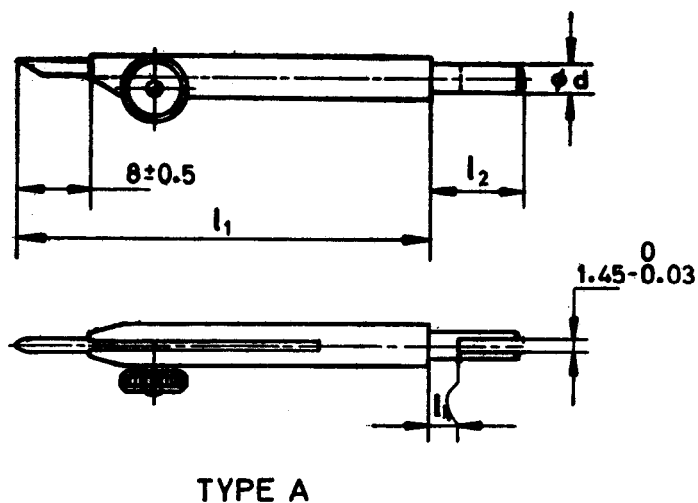
#### 10.1 Lot

In a consignment all the pencil points of the same type and size, manufactured from same material under similar conditions of production shall be grouped together to constitute a lot.

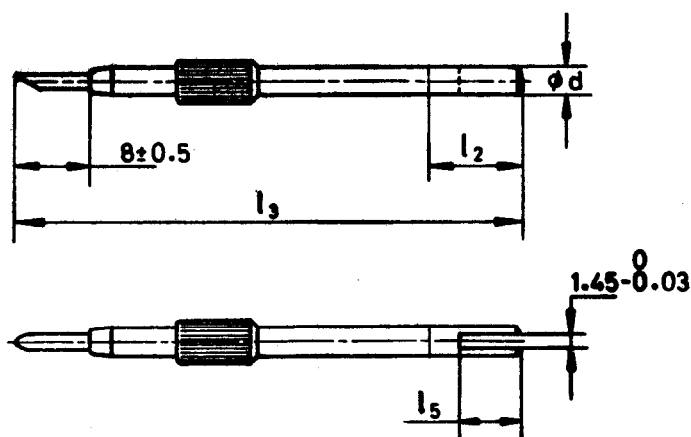
**10.2** Unless otherwise agreed to between the supplier and the purchaser, the procedure given in IS 2500 ( Part 1 ) : 1973 shall be followed for sampling inspection. The inspection level, acceptable quality level ( AQL ) and type of sampling plan to be followed for various characteristics shall be as given in 10.2.1 and 10.2.2.

**10.2.1** For dimensions, designation, general requirements, workmanship and finish, a single sampling plan with inspection level IV and AQL of 2.5 percent as given in Tables 1 and 2 of IS 2500 ( Part 1 ) : 1973 shall be followed.

**10.2.2** For screws ( see 8 ) a single sampling plan with inspection level II and AQL of 2.5 percent as given in Tables 1 and 2 of IS 2500 ( Part 1 ) : 1973 shall be followed.



TYPE A



TYPE B

All dimensions in millimetres.

FIG. 1 DIMENSIONS FOR PENCIL POINTS

$d$	$l_1$	$l_2$	$l_3$	$l_4$	$l_5$
$-0.01$ $-0.028$	$\pm 0.5$	$\pm 0.5$	$\pm 0.5$	$0$ $-0.3$	$+0.3$ $0$
3.5	32	9	41	3.3	5.7
4	45	12	57	4.8	7.2

## 11 MARKING

**11.1** Pencil points shall be marked with the manufacturer's name or trade-mark at a suitable place.

**11.2** The pencil points may also be marked with the Standard Mark.

## 12 PACKING

**12.1** Pencil points shall be first wrapped in paper and then packed in a suitable carton.

**12.2** Pencil points may also be supplied as a part of an instruments set in which case the complete set may be supplied in a suitable box.

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